

In the claims: Amend the claims as follows.

1.(currently amended) A method of logging a geological formation, comprising the steps of:

- (i) pulsing a low burst rate neutron generator so as to generate a series of neutron bursts that irradiate the formation;
- (ii) without counting or detecting individual pulses ~~of~~ stimulated by a burst from the low burst rate neutron generator, operating a detector of gamma or neutron radiation, that is so located as to detect neutron radiation or gamma ~~or neutron~~ radiation generated by the capture of neutrons in the formation to generate a current output that is indicative of gamma radiation detection; and
- (iii) integrating the current output of the gamma radiation detector to generate an analogue waveform that is characteristic of the rate of decay of gamma radiation, and hence of neutron capture rate, during the period of the decay.

2. (currently amended) A logging method according to ~~Claim 1~~ claim 1 including the further steps of:

- (iv) converting the analogue waveform resulting from step (iii) to digital form.

3. (currently amended) A logging method according to any one of the preceding claims 1-2 ~~Claim 1 or Claim 2~~ wherein the step (ii) of operating a detector of gamma or neutron radiation includes sampling the gamma or neutron radiation levels during ~~the~~ a gating interval.

4. (currently amended) A logging method according to any one of preceding claims 1-2 including the step of:

- (v) repeating the steps (i) and (ii) for a plurality of successive neutron bursts.

5. (currently amended) A logging method according to any one of preceding claims 1-2 including the steps of:

(v) measuring the background gamma radiation level before each neutron generator burst occurs.

6. (currently amended) A logging method according to ~~Claim 5~~ claim 5 including the step of:

(vi) subtracting each measured background radiation value resulting from step (v) from the gamma radiation level measured by the detector of gamma radiation in the next succeeding burst and decay period.

7. (currently amended) A logging method according to any one of preceding claims 1-2 wherein the neutron generator is pulsed between approximately ten and fifty times per second.

8. (Cancelled)

9. (currently amended) A logging method according to one of the preceding claims 1-2,
wherein step (i) uses a ~~Use of a low burst rate,~~ pulsed target neutron generator, step (ii) uses a
detector of gamma or neutron radiation, and step (iii) uses an integrator , in a method according
to any one of preceding claim claims 1-2.

10. (currently amended) A logging method ~~Use~~ according to ~~Claim 9~~ claim 9, ~~when~~
~~dependant from Claim 2 including use of~~ wherein step (iv) uses an analogue to digital convertor.

11. (Cancelled)

12.(currently amended) A logging ~~Use or~~ a method according to any one of preceding claims 1-2 characterised in that the low burst rate neutron generator, the detector of gamma or neutron radiation and the integrator are parts of or secured to a logging tool.

13.(new) A logging method according to claim 3 wherein the step (iii) of integrating the detector output current is carried out over gating periods defined by a plurality of sampling points.

14.(new) A logging method according to claim 13 wherein the plurality of sampling pints is limited to two gating intervals.